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The Progress of the Veterinary Profession in Ireland*

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To-night my address to you will be on the veterinary profession in this country, its progress since I qualified some twenty years ago and the lines along which I think future progress should be made. One of the objects for which this Association was formed in the year 1888 was to exercise supervision over and to extend protection to the interests of the profession. Up to the present the profession is in the happy position that it is not overcrowded, but when we hear of the vast numbers of students at present attending the Veterinary College it is essential that the Association should plan the future development of the profession and strive for its right direction, in order that room for the newcomers may be made.

I will commence with a few remarks about the Local Authority Veterinary Service. When I qualified in the year 1921 there were but two whole-time Local Authority Veterinary Inspectors in Ireland, namely, the late Mr. Andrew Watson, who was Chief Veterinary Inspector, Dublin Corporation, and Mr. P. F. Dolan, his assistant. In 1922 Mr. Watson died and was succeeded by Mr. Dolan. From that date the Local Authority Veterinary Service continued to grow and within two years the Dublin Corporation showed their appreciation of Mr. Dolan's worth and work by granting him three assistants, of whom, I am proud to say, I was one. Some years later the Cork Corporation appointed a whole-time Veterinary Officer. In 1928 an additional assistant Veterinary Inspector was added to the Dublin Corporation staff. About this time also a Chief Veterinary Inspector was appointed for Dublin County and another in 1930 for the Limerick Corporation.

To-day there are in all seven whole-time Local Authority Veterinary Officers in Dublin City, two in Limerick, two in Cork, one in Dublin County and one in the borough of Dun Laoghaire; that is, in all, 13 whole-time posts. I have no doubt that the profession will agree that progress has been made in Local Authority service and in the years to come it is up to us to see that this progress is maintained.

So far as the cities are concerned the veterinary profession has no cause for complaint, but what of the counties? There is only one county, namely, Dublin, with a Chief Veterinary Officer. Is the profession satisfied with this? Surely this is a field for development. Why not a Chief Veterinary Officer in every county in Ireland? I put it to you that this Association should indicate to the Minister for Local Government and Public Health and to the Minister for Agriculture the necessity for and the advantages of having a whole-time Veterinary Officer in every county in Ireland and to press for the appointments. Otherwise, in my opinion, this Association is not doing its utmost for the future welfare of the profession. I do not say that the present time is opportune to press for the actual appointments, but I do say that the case should be made out and great pressure brought to bear on the Ministers to adopt the principle of the County Veterinary Officer scheme, with the understanding that the appointments will be made when conditions become more favourable.

Before I depart from the Local Authority Veterinary Services mention must be made of the appointments of two veterinary surgeons in the Department of Local Government and Public Health. This is another advance in the last decade, an advance which this Association had been urging for many years past and a step in the right direction.

Next I will deal with that branch of the veterinary service under the control of the Chief Veterinary Officer, Department of Agriculture. This is a very old-standing branch of the profession and one which has attracted many of our graduates in the last twenty years. Many older members of this staff have either passed on or retired since my advent to the profession and well I remember what a grand type these gentlemen were, ever ready and ever willing to help the novice by giving him the benefit of their experience. Conditions of service have been much improved in this branch in recent years, due mainly to the efforts of this Association. There is still very fresh in my memory an item on the agenda entitled "Grievances of Departmental Veterinary Officers."

This branch has had a very strenuous time in the last year in dealing with the very extensive outbreak of foot-and-mouth disease—the biggest outbreak they have ever had to combat—and I do not wish to let this occasion pass without paying tribute to the way in which they succeeded, in the face of big obstacles, in eradicating this scourge from the country. Never was a staff worked so hard; never were the odds so heavy against it; yet with all that and despite snow, frost and heavy rain they continued incessantly at their task and by the autumn of the year their efforts were crowned with success. Truly a great achievement under the circumstances. It is the fervent hope of every member of the profession that this scourge will never visit our shores again.

Much progress had also been made by this branch of the profession in ridding the country of other scheduled diseases, with the result that to-day we experience very few of them. Doubtless the greatest possible care will be taken to prevent the re-introduction of those diseases which have already been eliminated. May I express the hope that with the co-operation of owners this branch will succeed in exterminating sheep scab in the next few years.

Another main function of this branch is the examination at our ports of animals for shipment: work which also carries serious responsibilities.

The Chief Veterinary Officer of the Department of Agriculture is also Director of Veterinary Research. Perhaps a few remarks on veterinary research, or rather the lack of it, will not be out of place here, for if the profession is to progress it is essential that much more research work into animal diseases in this country must be performed. A few years ago this Association took up this question with the Department of Agriculture. An estimate was made of the monetary loss caused by infectious and certain other animal diseases of a preventable nature and it was found to be in the neighbourhood of seven million pounds per annum. A memorandum was sent to the Department on the subject but, unfortunately, with no results. I am strongly of the opinion that this Association should again take up the case but backed this time by the various livestock owners' associations and other interested bodies. The undeveloped state of this vital branch of the profession is a very serious matter both for the country and for the profession, and an earnest endeavour should be made to have something done about it—and remember, no matter under whose auspices veterinary research is carried out, it is essential for the progress of the profession that the results are made available to the profession.

The next branch of the veterinary service with which I wish to deal was not in existence at the time I entered the profession. I refer to that branch of the Department of Agriculture concerned with the export of meat and meat products, the inspection of bacon factories, canning factories, etc. One can scarcely believe that up to the year 1928 there was practically no inspection of bacon factories in Ireland. The Dublin Corporation was the first body to give a lead in this direction and about this year it broke virgin soil by having a detailed routine veterinary inspection made of every pig in a bacon factory in its area. Then came the Fresh Meat Act in 1930 and under this Act numerous veterinary surgeons were appointed in bacon factories throughout the country. In Dublin, Cork and Limerick the men appointed were under the control of the Local Authority concerned and remained so up to the year 1938, when they were taken over by the Department of Agriculture.

With the advent of the Fresh Meat Act, 1930, was born this branch of the Departmental Veterinary Service then engaged in the inspection of meat and offals for export. A few years afterwards its activities were extended to include the inspection of all bacon, both for home use and for export. Latterly this branch has taken over the control of all factories producing meat and meat products for export and there are now about 35 whole-time Veterinary Officers engaged in this branch; in addition, there is a large number who are employed in a part-time capacity. Surely this represents progress which should be a source of pride to the profession.

I am very proud to say that the man at the head of this new State service got his practical training in meat inspection in the

* Presidential Address to the members of the Veterinary Medical Association of Ireland, on the occasion of the Annual General Meeting held in Dublin, January 30th, 1942.

Dublin Corporation Veterinary Department. As the newly-elected President of this Association I wish to congratulate him upon the wonderful department he has built up, upon what he has done for the veterinary profession, upon the way in which he has proved his worth and upon the esteem in which he is held by the Department of Agriculture.

That there is a bright future before this branch I have no doubt, but in order that its progress may be maintained its members must keep themselves fully acquainted with every new development in the meat trade.

I come next to that branch of the profession which educates and trains new members, namely, the Veterinary College of Ireland. It is gratifying to every member of the profession to know that the staff at the College has been much increased in recent years and that the College itself has been enlarged and extended. A large number of lecturers, all very excellent men, have been appointed. There must be much more personal contact now between student and teacher than was the case in my day. Every member of that staff, from the Principal to the most junior lecturer, is an expert in his own subject and some in more than one subject. The profession is satisfied that all these men strive their utmost, with the facilities at their disposal and within the curriculum laid down, to give the students the best possible instruction and training in all phases of the profession. But have these men got all the facilities they would desire for this purpose? Is the course of studies in certain subjects sufficient to turn out the present-day graduate well fitted to tackle the problems he meets when he leaves the College? Would it be better for the profession if the College was taken over by the University and the profession given a university status? These questions I will leave unanswered, but I will ask you as members of this Association to keep them in mind, and if you are not satisfied with the present conditions this Association should make representations to the proper authorities to have any defect remedied. For my own part, I wonder whether the present course in meat inspection is exhaustive enough to fit the graduates for posts in this line and whether the students have sufficient facilities for studying animals in health.

Lastly, I come to that branch of the profession, the greatest branch, so great that it is known as the backbone of the profession, namely, the practitioners. Despite this being the biggest branch of the profession I would like to draw attention to the fact that of the large number of veterinary surgeons that have qualified since my time only a very small proportion of them have been attracted to it. It certainly has been a very healthy sign of progress that new whole-time posts in the various branches of the services already dealt with were able to absorb most of the graduates, but we can hardly expect that this state of affairs will last and, therefore, in my opinion, a larger proportion of the graduates in the future will join the ranks of the practitioners.

A practitioner's life is a very busy one, particularly at some seasons of the year, and involves much hard work. He must keep himself up to date in the latest methods of treating diseased conditions and be conversant with new drugs and instruments which come on the market. Most of the veterinary practitioners to-day hold part-time posts under the Local Authorities. The remuneration for these part-time posts has in most cases been increased in the last six or seven years, but the duties have also increased. There are, however, districts in the country where a practitioner would find it very hard to make a living unless he had also something fairly substantial to depend upon in the way of a part-time post. If new practitioners are to get a living we must prepare the future development of veterinary practice.

Practitioners of Ireland, I put it to you that a wonderful field for your activities in the future lies at your door.

Consider the cattle diseases that are rampant in this country: tuberculosis, contagious abortion, mastitis and sterility. Any member of the profession whose duty it is to inspect, after slaughter, hundreds of old cows will tell you how disgusting it is to see how many of them from certain districts in the south are extensively affected with tuberculosis. Surely such a state of affairs should not be allowed to continue indefinitely. Surely the Government of the country should make a start to eradicate this disease. There is not much purpose in always saying that the problem is too big, that it would cost too much and that it would result in a scarcity of milk. Let the profession submit a scheme for its control and eradication to the Government and let the practitioners have their rightful place in such a scheme.

Already this Association has appointed a committee to formulate a scheme for the control of contagious abortion, mastitis and sterility for the purpose of placing it before the Government. The Association will require the advice and assistance of the practitioners in drafting this scheme, and I now make a special appeal to them to forward in writing their views on the subject.

The profession must have the active support of the livestock owners and the Government must be influenced to make compulsory whatever scheme is brought in. Special laboratory facilities must be afforded by the Government. It is in the country's interests that the incidence of these diseases be greatly reduced, so that when world conditions return to normal we will have for export stock guaranteed free from these diseases.

Now is the time to take the initiative and if you, the practitioners, are in earnest about it I am satisfied that the Government can be induced to take up a compulsory scheme to control these diseases, thus benefiting the country, the livestock owners and the veterinary practitioners.

The Treatment of Mastitis by Irrigating the Udder with a Solution of Proflavine Sulphate, combined with the use of a Mixed Vaccine

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The treatment of bovine mastitis by the use of udder infusions of 1 in 10,000 acriflavine has become standard and is usually effective. There are, however, a proportion of cases which are not cured in this way, and a number of attempts have been made to reduce the proportion of resistant cases.

Recent work in brain surgery has suggested that proflavine sulphate might be much less irritant than acriflavine and could thus be used in stronger concentrations for udder infusions; a larger percentage of cures than with the standard 1 in 10,000 acriflavine solution might result.

As a result of experiments on condemned animals, it has since been found that cows will tolerate an udder infusion of 1 in 5,000 or even 1 in 2,500 proflavine sulphate without any apparent injury to the udder tissue or loss of milk.

The following is a report on 39 cows treated during the past few months for catarrhal mastitis. No bacteriological examinations were made, but most of the cases were chronic and no doubt due to *Streptococcus agalactiae*. Each cow was affected in varying degree with the disease in one or more quarters, and a total of 71 quarters was irrigated. Except for numbers 27 and 31, a 1 in 7,500 solution of proflavine sulphate was used as the irrigating fluid. The first irrigation of numbers 27 and 31 was carried out with a 1 in 10,000 solution of acriflavine in 12½ per cent. sodium sulphate. An interval of approximately one week was allowed between irrigations, and the duration of each irrigation and the number given are signified on the table. Mixed mastitis vaccine was given subcutaneously at the time of the first and second irrigations in doses of 0·5 and 1 c.c. respectively, in most of the cases.

Of the 39 cows treated, 28 showed clinical recovery in periods ranging from one to three weeks, and of the 71 quarters irrigated 49 recovered. These results give a recovery rate of 71·8 per cent. in cattle and 69 per cent. in quarters.

Compared with the acriflavine vaccine method previously used, these results show a slightly higher recovery rate in quarters treated.

No.	Colour	Quarters affected	Period of lactation	No. of irrigations	Duration of irrigations	No. of doses of vaccine	Result of treatment
1	Red and White	RH	In milk	1	10 mins.	1	Clinical recovery.
2	Red	LH	In milk	1	10 mins.	-	Clinical recovery.
3	Red	LF	In milk	2	5 mins.	2	Milk normal, but greatly reduced in volume.
4	Red and White	LH	In milk	2	12 hours	2	Partial recovery.
5	Roan	LH	In milk	2	5 mins.	2	Clinical recovery.
6	Blue Roan	RH	Going dry	2	5 mins., 24 hours	2	Clinical recovery.
7	Red and White	LF	In milk	2	5 mins.	2	Clinical recovery.
8	Roan	RH	Going dry	2	5 mins., 24 hours	2	Clinical recovery.
9	Roan	RF, LH, RH	In milk	2	5 mins., 12 hours	2	No improvement.
10	Red and White	RH	In milk	2	5 mins.	—	Temporary recovery.
11	Red and White	LF, RF, LH, RH	Going dry	1	24 hours	—	Clinical recovery.
12	Blue Roan	LF, RF, LH, RH	Going dry	1	24 hours	—	Clinical recovery.
13	Roan	LH, RH	In milk	2	10 mins.	2	Clinical recovery.
14	Red and White	LF, RF	In milk	2	5 mins.	2	Clinical recovery.

No.	Colour	Quarters affected	Period of lactation	No. of irrigations	Duration of irrigations	No. of doses of vaccine	Result of treatment
15	Roan	RH	In milk	3	5 mins., 15 mins., 12 hours	2	No improvement.
16	Roan	LF, RF, RH, LH	In milk	2	5 mins.	2	Clinical recovery.
17	Red and White	RF	In milk	2	5 mins.	2	Clinical recovery.
18	Red and White	LH	In milk	2	5 mins.	2	Clinical recovery.
19	Red and White	LH	In milk	2	5 mins., 12 hours	2	Clinical recovery.
20	Roan	LF, RF, LH	In milk	2	12 hours, 3 hours	2	No flocculi, little milk.
21	Roan	LF, RF, LH, RH	In milk	2	12 hours, 3 hours	—	No flocculi, little milk.
22	Blue	LH, RH	Going dry	2	12 hours	—	Clinical recovery.
23	Roan	RF	In milk	2	5 mins.	—	Clinical recovery.
24	Red	RF, LH, RH	In milk	2	5 mins., 12 hours	—	No improvement.
25	Red and White	LH	In milk	2	5 mins.	—	No improvement.
26	Roan	LF, RF, LH, RH	In milk	2	5 mins.	2	Clinical recovery.
27	Red and White	LH	In milk	2	30 mins., 15 mins.	2	Clinical recovery.
28	Red	LH	In milk	3	30 mins., 15 mins., 10 mins.	—	Clinical recovery.
29	Black and White	LF	In milk	2	30 mins., 15 mins.	2	Clinical recovery.
30	Roan	LF	In milk	2	30 mins., 15 mins.	2	Clinical recovery.
31	Red and White	LF, RH	In milk	1	20 mins.	1	No improvement.
32	Roan	LF, LH	Going dry	3	15 mins., 24 hours, 24 hours	2	No improvement.
33	Red and White	LH	In milk	1	10 mins.	1	Clinical recovery.
34	Roan	LH	In milk	3	10 mins., 1 hour, 15 mins.	1	Clinical recovery.
35	Roan	LF, RF, LH, RH	Going dry	2	12 hours	—	Clinical recovery.
36	Red and White	RF	In milk	2	10 mins.	2	Clinical recovery.
37	Red and White	RH	In milk	2	10 mins.	2	Clinical recovery.
38	Red and White	LF, RF, LH, RH	Going dry	1	24 hours	1	Clinical recovery.
39	Roan	RF	In milk	1	10 mins.	1	Clinical recovery.

In a previous attempt to increase the number of cures obtained with acriflavine, a number of different vehicles were tried. Of these a 12½ per cent. solution of sodium sulphate showed most promise. This appeared to cause a definite improvement in most cases. It is now proposed to treat further cases with proflavine sulphate in the same vehicle.

I am indebted to the Bacteriological Laboratory of Messrs. Boots Pure Drug Co., Ltd., for their co-operation in this work.

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TEMPERATURE-TAKING IN ERITREA

A striking comment on the conditions attending veterinary activities in the area concerned is provided by the following extract from the vivid contribution made to the February issue of the *Journal of the Royal Army Veterinary Corps* by Captain J. H. McGhee, entitled "With Pack Transport in Eritrea." "It should be mentioned," he writes, "that, although the temperature on the hills during the day was in the region of 120° F. (not in the shade, because there was none!), at night it was bitterly cold. Many of our clinical thermometers were broken by the heat (rendering the completion of A.F. No. 1.1230 simple!), and it was difficult to take temperatures during the day. If one was not quick in reading the thermometer each case recorded a high degree of fever! Therefore, temperatures were normally taken in the early morning or in the evening."

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Victoria, a famous Ayrshire cow in Australia, has died at the age of 29, the greatest age ever recorded in the Commonwealth for a milking cow. She was born in Australia shortly after the arrival of her mother from Scotland.

The Fogging of X-Ray Films

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Over a number of years there have been a few occasions when I have felt dissatisfied with my finished films, and have wondered where I have failed in my technique. Sometimes I have been inclined to blame the tube output, or the brand of film, never in the early days giving a thought to the developer. But this, I found, was a most potent cause of indifferent films. The frequency with which one renews the developer solution must of course depend upon the number of films developed in it; but even if it has had very little use, I find it must be renewed after about three months. Time flies so, that one is apt to overlook the fact that the developer has become old. Thus, for some years, I have made a practice of date-stamping the tank each time a fresh solution is prepared.

The result of using stale developer is a foggy film lacking in contrast or detail, though these are characteristics also of under-development or the use of too cold a solution. If one rigidly adheres to the technique for processing films as outlined in my article which appeared in *The Veterinary Record* of July 24th, 1937, one point of which was that development should not be continued longer than five minutes in a solution at 65° F, then it will be readily seen that under-development will result if the solution is stale, although time and temperature are as specified. A solution at, say, 55° F. will not be so active as one at 65° F., so that five minutes' immersion only will again result in under-development. All through the freezing months of this winter it has been necessary repeatedly to use the immersion-heater in the developer to raise its temperature, and although I have no direct evidence, I believe that this repeated heating rapidly deteriorates the solution. If possible, therefore, one should have an indoor darkroom rather than one placed outside as is mine. Closely associated with one's failure to renew the developer frequently enough is the omission to clean out the vulcanite or rubber tanks. Apparently the failure periodically to sterilise the tanks permits bacterial growth which has the effect of changing sulphite into sulphide and so fogging the film.

What is known as dichroic fog arises generally from the use of an exhausted fixing solution, or fixer which has become contaminated by developer. The latter possibility occurs easily enough unless one is particularly careful to wash films thoroughly in running water between developing and fixing. My own darkroom is arranged so that the water bath is in the centre, the developer on the right, and the fixer on the left. By this arrangement it is practically impossible to contaminate the fixer with developer, or *vice-versa*. But I would expect such contamination if I did what I have seen some others do—that is, just dip the film in and out of the water after developing, and then plunge it in the fixer. It would seem almost certain that some trace of the alkaline solution would get into the acid, through such inadequate washing.

Foggy, flat, lifeless or otherwise unsatisfactory films are not always the products of bad processing, as some other factor may have crept in, such as under-exposure, scatter, or an unsafe dark-lamp. It is astonishing how much daylight actually penetrates into some so-called dark rooms, and one has to sit inside for several minutes without a Wratten light in order to appreciate the imperfections. In view of the sensitivity of the extra-rapid films used in present-day radiography, such faults must be rectified.

Finally, it is useful to remember that in cases of urgency, should one wish to eliminate the final one hour's washing, negatives can be adequately washed if each side is held under a running tap for two minutes.

QUALITY TEST BASIS FOR MILK PRICES

Arrangements for putting into operation the testing of milk for quality, one of the main points of a "pay-on-quality" scheme put forward by the Milk Board and the N.F.U. last December, are (says *The Farmers' Weekly*) being made by the Government. The main provisional proposals of the same were given in *The Veterinary Record* of April 11th.

It is probable that the first full-scale testings will be regarded as experimental, as it is not intended to bring the main scheme into operation until October 1st.

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According to a German news agency message from Paris, the French authorities have ordered a cattle census to be taken in occupied France during May. This will serve as the basis for cattle feed distribution in the individual districts.—Reuter.

THE VETERINARY RECORD
May 23rd, 1942

THE PROFESSION AND PUBLICITY

SOME attention has recently been given to the age-old question of advertising our profession and, as a result, two schools of thought seem to have developed.

The first, perhaps rather conservative group, have not changed from the view that has been the generally accepted one for many years, and feel that the integrity of the profession and the ability of its individual members should be sufficient publicity for us and that anything further would lower our professional status and dignity.

The second group feel, however, that special circumstances require a changed outlook to combat them, and that the ideas of the first group are not sufficient under war-time conditions. They feel that the livestock population of the country is not so much composed of individual flocks and herds owned by individual stockmen, but should be considered collectively as a very important national asset. The loss of a cow, for instance, should not be considered as a matter of Mr. Smith being so many pounds out of pocket, but as a matter of so many "little Smiths" being deprived of their daily pint of milk.

Who are the proper people to play the major part in the prevention of such losses? Unquestionably the veterinary profession. This is recognised by the Government and is the reason why we are reserved, why we receive generous petrol rations and so on. In short, we have been given a very definite job to do, and it is up to us to see that it is done at all costs—not for the benefit of the individual owner or veterinarian, but for the good of the country as a whole.

Is it not then desirable for the N.V.M.A. to carry out publicity campaigns, to let stock owners know what we can do to control the losses amongst farm animals?

To quote a particular instance of where publicity would be useful, one has only to consider the losses due to entero-toxaemia in sheep. In many districts these assume alarming proportions. Hundreds of sheep are lost every spring and nothing is done about it, because the average farmer does not know that we have a very potent serum to control such outbreaks. As every ewe that dies represents the weekly meat ration of several families, should we not consider it to be our duty to see that the men responsible for these flocks are informed that their losses can be reduced? This is one isolated instance, and we all realise that the sum total of preventable loss must be colossal.

Another fact to be remembered by the profession is the comparative ignorance of the consumer as to the rôle of the veterinarian in the national economy. Unless we encourage informed publicity we shall "have always with us" the complaint that the profession is ignored and that its duties are deemed to be more suitably undertaken by others.

It might be well, then, temporarily to forget our old standards of dignity, and consider the more important and practical question as to whether we are really shouldering our responsibilities and putting the maximum effort into our job, or whether we are shirking and indulging in our national vice of apathy.

Little honour to him who hides his light under a bushel.

Weekly Wisdom

"The greatest progress regarding animal diseases has been made in the last fifty years, during which period veterinary pathology has, so to speak, commenced to stand on its own legs. The notion that it would be possible to create a class of men with an intimate knowledge of both human and veterinary pathology is a fantastic one, and it can hardly have occurred to anyone who has made himself master of either. In both professions it is specialisation that has done most to increase knowledge, and it is by the same process that we must seek to advance."—Sir John M'Fadyean, 1923. Review of the Progress of Veterinary Science during the past Hundred Years. *J. Comp. Path. and Ther.* **36**. 243.

CLINICAL COMMUNICATION

Haemorrhage Following Expression of the Corpus Luteum

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Case 1.—The subject was a valuable pedigree Guernsey cow which had won a breed championship at a county show. I was consulted three months after her last calving as she had not then come into oestrus. Upon rectal examination, the left ovary was found to be inactive. The right ovary contained a corpus luteum which was considered to be that of the last pregnancy. It was of moderate size, extending a little beyond the surface of the ovary, of a rubber-like consistency and apparently not too firmly embedded. With the consent of the owner, the corpus luteum was expressed without much difficulty.

The operation was carried out at 11 a.m. At 10 p.m., I received a telephone message from the owner saying that he suspected that the cow was going down with milk fever. On my arrival I found the cow on the ground, breathing rapidly and very restless. She repeatedly kicked at her belly and made frequent unsuccessful attempts to rise. Her horns and ears were cold and the body was bathed in a cold sweat. The pulse was imperceptible. She died at 11 p.m., exactly twelve hours after the surgical interference.

Post-mortem examination revealed that the cow had bled from the crater in the right ovary from which the corpus luteum had been expressed. The ovary appeared to be undamaged in any way. Traces of yellow luteal tissue were still visible in the walls of the cavity. The abdomen was filled with blood and very little remained within the vessels. The carcase showed lesions of tuberculosis in the liver and mesenteric glands.

Case 2.—The subject was a 5-year-old Guernsey cow. She had been served five times and was last in oestrus ten days previous to my visit. Rectal examination revealed a normal uterus which contracted firmly when handled. The vaginal fluid was clear. An apparently normal corpus luteum was present in the right ovary. It extended well above the surface and comprised about three-quarters of the total ovarian mass. On very gentle manipulation, the corpus luteum "popped out" and was felt to fall into the peritoneal cavity. As the uterus appeared normal, no attempt was made to carry out irrigation.

On the following morning, 24 hours later, I was informed that after several hours "colic," the cow had collapsed in the ditch and appeared to be unconscious. Upon my arrival, she was cold, sweating, and her corneal reflex had almost completely disappeared. The pulse was almost imperceptible. She was covered with straw and sacks after being propped up on her sternum and an intravenous injection of normal saline and adrenalin was administered.

On the following morning her condition was unchanged excepting that she had been induced to drink some chilled water. On the fourth day she rose and was able to walk back to the yard.

The cow has since been served and, according to the owner, is now in calf.

Moral.—Never interfere with the corpus luteum if it can be avoided. If you must, then warn the owner of the possible danger and obtain his consent before operating.

A change which before the war was gradually developing in the meat trade, and which will have great impetus during it, is the increased demand for cooked and canned meats to save trouble in household cooking. In this we may see the solution of what has been one of the troublesome problems of the trade—the finding of a demand for the cheaper joints. One advantage of the erection of some abattoirs in this country would be that they could put the best cuts such as the hindquarters of beef on to the dead meat markets and work up the cheaper cuts of the forequarters to issue them as cooked meats to the retailer. If the retail butcher is to cater for the meat trade as a whole he should be ready to take up this trade, otherwise the grocer will step in with the sale of canned meats.—*Dr. John Hammond.*

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What can be Expected when Straw is Pulped.—The value of wheat straw as a food is trebled when made into pulp, and that of barley straw is doubled. One ton of wheat straw makes 3½ tons of straw pulp, with a feeding equivalent of 1 ton of hay, or 10½ cwt. of crushed oats. Chaff and cavings, similarly treated, are equal to the value of pulped straw. Straw pulp should be consumed soon after making. It should not be kept longer than seven days.

Scheme for the Control of Diseases of Dairy Cattle

An Encouraging Reception

The national and agricultural Press have given a cordial welcome to the scheme announced by the Ministry of Agriculture for the more effective control of the cattle diseases which bear heavily on the dairying industry and the terms of which were recapitulated in our last issue, the draft of the agreed scheme having been published in the issue of the *Supplement* to *The Veterinary Record* of August 30th, 1941. Typical is the comment of *The Times*, which, having made reference to the terms of the undertaking between the farmer and his veterinary surgeon and to the Ministry's contribution of free laboratory services for diagnostic work, and the provision of abortion vaccine free of cost and sulphanilamide at a reduced charge, observes : " It is to be hoped that there will be a big response to this offer. Every dairy farmer should realise that he can now get the fullest help in combating diseases which rob him of many gallons of milk a year and cause him much worry. Spasmodic appeals to the local veterinary surgeon, who may not always have had expert knowledge of up-to-date treatment, have not checked these troubles. With the institution of a national scheme of control, farmers and veterinary practitioners everywhere will have access to the best advice, and, with a concerted drive, real progress should now be possible.

" Unfortunately the owner of a herd with a really unsatisfactory milk yield who most needs regular advice is unlikely to avail himself of this scheme. He thinks he knows better, but it has now become one of the duties of War Agricultural Committees to keep an eye on milk production as well as crop production, and willy-nilly he may find himself accepting advice and carrying it out if he wants to keep his farm."

In connection with the administration of the scheme the Ministry has issued the following documents to all whole-time Panel A and Panel B Inspectors in England and Wales : The Form of Undertaking (Form No. C132/T.A.Y.) ; Memorandum No. C.S.2—a reproduction of the document circulated by the National Farmers' Union to their County Branches, but intimating the date of the operation of the scheme—June 1st (this was published on pp. 194-196 of our last issue, but a copy will be sent to anyone making application to the Ministry), and Memorandum No. C.S.3—a memorandum to veterinary surgeons explaining various points of procedure in connection with the scheme. At the time of writing (Monday, May 18th) we are informed that copies of a further document, Memorandum No. C.S.1 (Methods of Treatment to be followed by the Veterinary Surgeon) will also be circulated to the officers mentioned above, at an early date. Following is text of Memorandum No. C.S.3. :—

Memorandum to Veterinary Surgeons

1. Services provided by the Ministry.—Where an undertaking between a veterinary surgeon and a farmer has been made under the Scheme for the Control of Diseases of Dairy Cattle, the Ministry of Agriculture and Fisheries will provide free laboratory facilities, free anti-abortion vaccine, and sulphanilamide at a low cost. In order to obtain these free and assisted services the veterinary surgeon or the farmer must detach and send to the Secretary, Ministry of Agriculture and Fisheries, Fernlea Hotel, St. Annes, Lytham St. Annes, Lancs, the notification slip appended to the form of undertaking. The receipt of the notification will be acknowledged, both to the veterinary surgeon and to the farmer.

2. Laboratory Facilities.—The free laboratory facilities will be available at the 12 Provincial Advisory Centres in England and Wales to which a Veterinary Investigation Officer is attached. The facilities will include, where necessary for the purposes of the scheme, the blood agglutination test or examination of other material for contagious abortion, and examination of milk for the determination of the type of infection present in cases of mastitis. The diagnosis of *Str. agalactiae*, however, will normally be made by the practitioner on clinical grounds, and it is intended that laboratory assistance should be sought in doubtful cases only.

A list of the Provincial Advisory Centres, showing the counties served by the Veterinary Investigation Officer in each case, is appended for reference. For the laboratory facilities provided under the scheme, the veterinary surgeon should look to the Veterinary Investigation Officer serving the county in which the farm concerned is located.

3.—Anti-abortion Vaccine.

(*a*) *Tuberculin Tested Herds.*—The Minister of Health has made Regulations amending the Milk (Special Designations) Order, 1936, by prohibiting the use of a live *Brucella abortus* vaccine in a licensed Tuberculin Tested herd " except with the approval of the Minister of Agriculture and Fisheries and with a vaccine approved by him." The Regulations come into operation on June 1st, 1942. Approval will only be given to the use of a live vaccine where the blood agglutination test or other laboratory examination of material provides evidence that the herd is infected with contagious abortion. Application for such approval should be made to the Ministry's Divisional Inspector, supported by a laboratory report of the test or examination as the case may be. The use of two vaccines only will be approved, namely, No. 1 vaccine (standard) and No. 2 vaccine ; both will be prepared at the Ministry's Veterinary Laboratory.

(*b*) *Other Herds.*—In herds, other than licensed Tuberculin Tested herds, participating in the control scheme, the use of one of the two approved vaccines is permissible only in cases in which the veterinary surgeon is satisfied from clinical examination and history that the herd is infected with contagious abortion.

(*c*) *General.*—The Ministry will supply free of charge for use under the scheme the two approved vaccines. The available evidence suggests that both vaccines will be effective when used in adult animals. No. 1 vaccine, which will be used as the standard vaccine, is administered in a single dose and has been widely and successfully used for the vaccination of calves. No. 2 vaccine, which will be used in those cases where for any reason a particular preference for it is expressed, has so far only been successfully tested in adult animals in two doses only. Since it is not yet known whether it will be equally effective in a single dose, two doses should be employed. Whether this vaccine is suitable for calfhood vaccination is not yet known, and until this knowledge has been acquired it should not be used for this purpose. For those herds, however, which depend on the sale of animals giving a negative agglutination test, this vaccine possesses the advantage that it does not produce positive reactors.

(*d*) The use of any live vaccine other than one of the two supplied by the Ministry will not be permissible under the scheme ; nor will the use of both vaccines, *e.g.*, No. 1 vaccine for the calves and No. 2 vaccine for the adult animals, be permissible in the same herd.

(*e*) Applications for vaccine for use under the scheme must be made on Form No. B.523/S.E. to the Director, Veterinary Laboratory, New Haw, Weybridge, Surrey. The two vaccines will also be available to veterinary surgeons, on payment, for use outside the scheme. Veterinary surgeons are asked to return empty vaccine bottles at a convenient opportunity.

4.—Sulphanilamide.—Applications for sulphanilamide for use under the scheme must be made on Form No. B.522/S.E. to the Director, Veterinary Laboratory, New Haw, Weybridge, Surrey. In no circumstances will sulphanilamide be supplied otherwise than for use under the scheme. Sulphanilamide will be supplied in units of 3 lb. and 7 lb. Applications should therefore be for multiples of 3 lb. or 7 lb., or for a combination of 3 lb. and 7 lb. units. Subject to this, quantities in excess of 1 lb. for each ten cows covered by undertakings notified to the Ministry in accordance with paragraph 1 will not normally be supplied unless the application is accompanied by an explanation of the circumstances in which a larger quantity is required. A small charge, namely 2s. 6d. per lb., will be made for sulphanilamide; terms, cash with order, or in any event payment within three months of order.

5. Records to be Kept by Veterinary Surgeon.—Veterinary surgeons will be required to keep a record showing, in respect of each herd, (*a*) visits paid (with dates) ; (*b*) number of milk samples sent for laboratory examination, type of mastitis infection disclosed, number of cows treated with sulphanilamide, and number of cows otherwise treated for mastitis ; and (*c*) number of blood samples sent for laboratory examination (with results), and number of animals vaccinated and vaccine used. Such record shall be open to inspection at any time by an officer of the Ministry. Veterinary surgeons will also be required to furnish the Ministry at the end of each year of an undertaking with a summarised report in respect of the herd on a form provided by the Ministry for the purpose.

6. Withdrawal of Services.—The Ministry reserves the right to withdraw the free and assisted services described in this memorandum in any case in which it considers such a course desirable.

Addendum

List showing Provincial Advisory Centres and the Counties served by the Veterinary Investigation Officer :

	Address of Provincial Advisory Centre	*Counties Served by the Veterinary Investigation Officer*
1.	King's College, Newcastle-on-Tyne, 2.	Cumberland, Westmorland, Durham and Northumberland.
2.	Department of Agriculture, The University, Leeds, 2.	Yorkshire : East, North and West Ridings.
3.	Midland Agricultural College, Sutton Bonington, Loughborough.	Derby, Leicester, Lincoln (Kesteven and Lindsey), Nottingham and Rutland.
4.	School of Agriculture, Cambridge.	Bedford, Cambridge, Essex, Hertford, Huntingdon, Isle of Ely, Lincoln (Holland), Norfolk, Soke of Peterborough, and Suffolk (East and West).
5.	South Eastern Agricultural College, Wye, Ashford, Kent.	Kent, Surrey and Sussex (East and West).
6.	Faculty of Agriculture and Horticulture, The University, Reading.	Berkshire, Buckingham, Dorset, Hampshire, Isle of Wight, Middlesex, Northampton and Oxford.

Address of Provincial Advisory Centre	*Counties Served by the Veterinary Investigations Officer*
7. Seale Hayne Agricultural College, Newton Abbot, Devon.	Cornwall, Devon and Isles of Scilly.
8. Agricultural Advisory Department, Bristol University, 22, Berkeley Square, Bristol, 8.	Gloucester, Hereford, Somerset, Wiltshire and Worcester.
9. Harper Adams Agricultural College, Newport, Salop.	Salop, Stafford and Warwick.
10. Department of Veterinary Pathology, Liverpool University.	Cheshire and Lancashire.
11. University College of North Wales, Bangor.	Anglesey, Caernarvon, Denbigh, Flint, Merioneth and Montgomery.
12. University College of South Wales and Monmouth. Cathays Park, Cardiff.	Glamorgan, Monmouth, Brecon, Radnor, Cardigan, Carmarthen and Pembroke.

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The Cheshire Demonstrations

The farming Press also devoted much space to reports of the outstandingly successful milk production demonstrations staged by the Cheshire War Agriculture Executive Committee at Middlewich on May 9th, an account of which, with particular reference to the prominent part played therein by representatives of the profession, appeared in our issue of last week. Specially noteworthy, perhaps, was the reference by *The Farmer and Stock-Breeder* to the event constituting "a revolutionary break-away from professional reticence which brought the veterinary aspect of milk production right to the fore," when "probably for the first time in history, four of the leading veterinary authorities of this country and one from the United States demonstrated to farmers the methods available for attacking the major diseases of dairy cattle." The headlining of the report—"Cheshire opens attack on disease with veterinary demonstrations"—is further justified by the comment, "Although large crowds surrounded each of the exhibits and kept those in charge busy answering practical questions, there can be no doubt that the main interest among the record crowd present centred in the veterinary demonstrations."

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Erratum.—In our report of Mr. Cabot's remarks at the recent meeting of the Guild of Agricultural Journalists on the subject of the control of the major diseases of dairy cattle, the second sentence of para. 1, col. 2, p. 197, should read: "Another interesting thing about this vaccine was that the animals reacted to the agglutination test when they were vaccinated as calves, but as they grew older they ceased to react."

"SWEET CLOVER DISEASE" OF CATTLE

"'Sweet clover disease' has long been known to occur in cattle," observes *The British Medical Journal* in an annotation entitled "Clover instead of Heparin" (1942, January 17th). "It occurs when the cattle eat clover hay or silage that has not been properly prepared, and the symptom is bleeding, which may be fatal. The disease is cured by withdrawing the clover and also by injecting fresh serum from normal animals. Roderick[1] noted that the blood from cows suffering from the disease did not readily clot, and that there was a reduction in the amount of prothrombin. For some years workers at the Wisconsin Agricultural Experiment Station[2] have been trying to isolate the substance in clover which is responsible for the action, and have now found it. It is 3:3'-methylene-*bis*-(4-hydroxy-coumarin). Coumarin is an old friend, the odorous principle of the Tonka bean, used in pharmacy to disguise disagreeable odours; it is therefore interesting to learn that a simple derivative of coumarin occurs in clover and has an anticoagulant action. Butt, Allen, and Bollman,[3] working at the Mayo Clinic, have investigated the action of the isolated principle on the blood of dogs. They observed no effects whatever except those due to the altered coagulability of the blood, although doses as high as 100 mg. daily were given orally for seven weeks. Doses of from 10 to 100 mg. caused great delay in coagulation time after forty-eight hours; instead of being six to eight minutes by the method used it became twenty-five to thirty-five minutes. The change persisted until administration was stopped, when the coagulation time returned to normal in three to four days. Investigations have also been made in patients, but the results are not yet so clear as in dogs. After the administration of a dose of 0·3 gramme daily for five days the coagulation time was increased from three to eighteen minutes, but the effect persisted for about fourteen days. The authors think that this coumarin derivative from clover may replace heparin, because it can be given by mouth, has a prolonged action, and is cheaper."

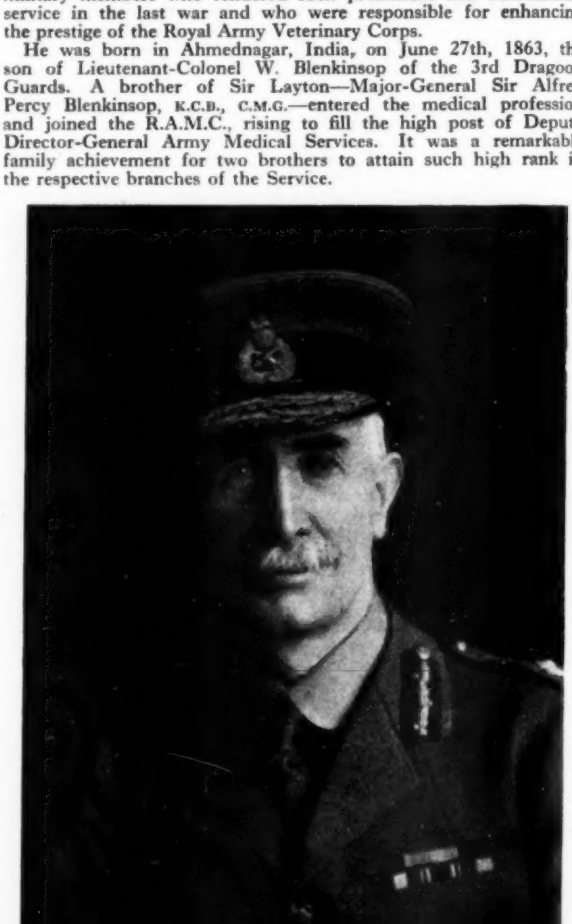
(1) *Amer. J. Physiol.* (1931.) **96**. 413.
(2) *J. biol. Chem.* (1941.) **138**. 513.
(3) *Proc. Mayo Clin.* (1941.) **16**. 388.

MEMOIR

Major-General Sir Layton John Blenkinsop, K.C.B., D.S.O.

The death of General Sir Layton Blenkinsop on April 28th, 1942, at his residence at Melstead, Melbourn, nr. Royston, in his 79th year, depletes the profession of another of its distinguished military members who rendered such prominent and outstanding service in the last war and who were responsible for enhancing the prestige of the Royal Army Veterinary Corps.

He was born in Ahmednagar, India, on June 27th, 1863, the son of Lieutenant-Colonel W. Blenkinsop of the 3rd Dragoon Guards. A brother of Sir Layton—Major-General Sir Alfred Percy Blenkinsop, K.C.B., C.M.G.—entered the medical profession and joined the R.A.M.C., rising to fill the high post of Deputy Director-General Army Medical Services. It was a remarkable family achievement for two brothers to attain such high rank in the respective branches of the Service.



Qualifying at the Royal Veterinary College, London, in March, 1883, the following September he entered the Army and ten years later he was appointed Veterinary Surgeon 1st Class. These first ten years were spent in India and from 1890 to 1893 he was specially employed by the Punjab Government as Veterinary Adviser and filled the post of Professor at the Lahore Veterinary College.

From 1896 to 1899 he served in Egypt and accompanied the Nile Expeditionary Force in 1898, being present at the Battle of Khartoum. For his services in this campaign he was mentioned in despatches, awarded the Egyptian Medal with Clasp, the Queen's Medal and the Distinguished Service Order. From Egypt he was sent to South Africa and served in the South African War from 1899 to 1903, being promoted Major in November, 1900, and Lieutenant-Colonel in March, 1903, filling the position of Senior Veterinary Officer, 3rd Army Corps. He was mentioned in despatches in the campaign and awarded the Queen's South African Medal with six Clasps and the King's Medal with two Clasps. He returned to South Africa in 1906 when he was promoted full Colonel and held the appointment of principal Veterinary Officer in that force,

On re-posting to the United Kingdom three years later he held administrative rank in the Southern and Aldershot Commands up to the outbreak of the Great War, when he was posted as principal Veterinary Officer in India. In 1916 the designation of principal Veterinary Officer was changed to Director of Veterinary Services, India, with the rank of Brigadier-General. He remained in India until the end of 1917, when he succeeded Major-General Sir Robert Pringle as Director-General Army Veterinary Services.

For his services as Director-General he was mentioned in despatches in the London Gazette of November 26th, 1918, and in the Birthday Honours of June 3rd, 1919, he was created a Commander of the Order of the Bath, and later, in the New's Year's Honours List of January 1st, 1921, he was created a Knight Commander of that Order.

On completion of four years as Director-General Army Veterinary Services he retired on December 1st, 1921. His association with the Corps was not ended, however, for he was selected as first Colonel Commandant of the Royal Army Veterinary Corps, an appointment he held till he reached the age limit in 1930.

Perhaps the hardest task that General Blenkinsop had to tackle was the demobilisation of horses after the war and to ensure that such animals as were returned from the various theatres of war to the United Kingdom were free from disease. It is to the credit of his administration that after the war the repatriation of thousands of animals to the United Kingdom was carried out without introducing into the United Kingdom any epidemic diseases.

He was Co-Editor with Lieutenant-Colonel J. W. Rainey, C.B.E., of the official History of the War (Veterinary Services).

He took a great interest in the affairs of the governing body of the Royal College of Veterinary Surgeons and was for several years a member of Council.

Sir Layton was a man of towering height with a strong and vigorous personality, a man of few words but with an immense capacity for work. He had a genius for administration and his whole career was permeated with the resolve that his profession and Corps should receive that recognition and regard it rightly deserved. He was never afraid of opposition and was inflexible in following a course, however unpopular, if it meant the betterment of his Corps. He was austere and dominant, but a gleam of humour could often be discerned when he appeared harsh and perhaps unrelenting.

QUESTIONS IN PARLIAMENT

Slaughter of Animals (Cartridges)

Dr. Little asked the Minister of Supply whether, as there is a shortage of ·310 cartridges throughout Great Britain and Northern Ireland, which are necessary for the killing of horses and large cattle for which the captive bolt killer has proved unsatisfactory, he will give instructions that adequate supplies of these cartridges be maintained?

Sir A. Duncan: I regret that further manufacture of ·310 cartridges cannot at present be arranged.

Dr. Little: Is the right hon. Gentleman aware that the shortage of these cartridges will result in the inhuman form of slaughter prevailing before the Act of 1932?

Sir A. Duncan: I am having that particular representation investigated at present. There appears to be considerable doubt as to whether it is a fact.

Cats' Meat

Mr. Brooke asked the Parliamentary Secretary to the Ministry of Food whether he is aware that one effect of the present controlled prices for horseflesh is to make it increasingly difficult for the small retailers of cats' meat in London to obtain supplies, causing resentment not only to them but to their regular customers; and will he take action to prevent this trade from being diverted, as is happening at present, away from the established small retailers into the hands of people who never previously sold cats' meat by retail?

Major Lloyd George: I am aware that some retailers of cats' meat are not obtaining sufficient horseflesh to meet all demands by their customers. This is to some extent the result of an increased demand for this commodity in consequence of the rationing of meat and of the sale of larger quantities of horse meat for human consumption at higher prices. As regards the second part of the Question, retailers of meat for feeding animals are required to hold licences from the local food control committees. These licences are generally confined to retailers who were previously engaged in this trade, additional licences being granted only where the committee are satisfied that they are required in the public interest.

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

May 29th.—Meeting of the South Wales Division, N.V.M.A., at Carmarthen, 2 p.m.

June 2nd.—R.C.V.S. Committee and Council Meetings, York.

June 2nd.—Meeting of the Lancashire Division, N.V.M.A., at Chester, 2.30 p.m.

June 3rd.—R.C.V.S. Annual General Meeting. Committee and Council Meetings.
Victoria Veterinary Benevolent Fund Annual Meeting, York.

June 4th.—Meeting of the Central Veterinary Society at the Conway Hall, Red Lion Square, W.C.1, 2.30 p.m.

June 5th.—D.V.S.M. Written Examination commences, Edinburgh.

June 9th.—D.V.S.M. Oral and Practical Examinations begin.

June 25th.—R.C.V.S. Written Examinations begin.

June 29th.—R.C.V.S. Oral and Practical Examinations begin.

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RUBBER GLOVES

Rubber gloves have hitherto been available for purchase not only by those who need them for essential purposes, but also by the general public. Henceforward their sale for other than absolutely essential use is prohibited. Under the Rubber Gloves Order (S.R. and O., 1942, No. 918, obtainable price 1d. at H.M. Stationery Office or through any bookseller) gloves made wholly or partly of rubber may not be supplied except against a signed certificate. Agricultural veterinary surgeons in England and Wales, Scotland and Northern Ireland respectively may apply forthwith to: (*a*) The Ministry of Agriculture (Animal Health Division), Fernlea Hotel, St. Annes-on-Sea, Lancashire; (*b*) The Department of Agriculture for Scotland, St. Andrew's House, Edinburgh, 1; (*c*) The Ministry of Agriculture for Northern Ireland, Stormont, Belfast.

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CATTLE LOSSES THROUGH POISON GAS ON SWISS PASTURES

The Geneva Correspondent of *The Times* reports that eighteen months ago, during exercises by Swiss troops on pasture land in the Canton of Uri, some gas was released. Cattle which have since been allowed to graze over the area which was gassed have been stricken with illness, and two-thirds of them—as many as 7,000 head—have had to be slaughtered. It has been found that all the plants in the area had been infected by the gas down to the roots, and the pastures are being transformed into arable land.

* * * * *

R.C.V.S. ANIMAL MANAGEMENT EXAMINATION

List of Successful Candidates

London:

Allpress, S. G.
Beveridge, C. G. L.
Biggers, J. D.
Bligh, P. S.
Briggs, C. A. E.
Burdin, M. L.
Button, A.
Chapman, R. J.
Croft, Miss M. E. (credit).
Davies, P.
Dingle, P. J.
Drake, J. C.
Early, J. L.
Fawcett, J. F.
Gardner, B. L.
Gibson, E. A.
Gledhill, K. C.
Gover, R. W. M.
Harthoorn, A. M.
Heslop, G. P. M.
Lobban, Miss M. C. C.
Massey, Miss R. V.
Milnes, Miss J. N. (credit).
Philcox, R. A.
Rogers, M. J. H.
Russell, E. W.
Scott, Miss S. M. S.
Self, A. D.
Shah, S. M. H.
Shuja, J. D.
Taylor, E. E.
Wilson, F. A.
Wood, D. R.
Woodroffe, G. E.

(To be continued)

STARVING-OUT BACTERIA

"To cure disease by starving the pathogen is an attractive suggestion which was expressed shortly after the microbial nature of many ailments became known," observes *The Lancet* of January 10th, in an editorial. "A banting regimen was proposed for the invading organism; but who would have pictured it in the situation in which a sulphanilamide-treated streptococcus is now conceived: surrounded by substances essential for its growth, but of which it cannot make use? Suggestions that therapeutic agents affect processes of nutrition in the organisms which they inhibit date at least from the time of Ehrlich, but their exact demonstration is recent. Several workers showed that media suitable for growth of streptococci were rendered unsuitable by sulphanilamide but that the organism could again grow on further addition of natural extracts to the sulphanilamide-containing media. Good presumptive evidence was given by Woods[1] that the active material in these extracts was *p*-aminobenzoic acid and this has been confirmed by Rubbo and Gillespie,[2] whose paper appears on another page. The only action of sulphanilamide under these conditions is to make the organism nutritionally more exacting, for *p*-aminobenzoic acid is demonstrably not needed for the normal growth of streptococci. Fildes[3] was however able to suggest, by analogy with work on other bacterial nutrients, that *p*-aminobenzoic acid was probably an essential substance for at least all organisms susceptible to sulphanilamide inhibition, but that it need not be supplied preformed because most organisms themselves synthesised it. Rubbo and Gillespie support these conceptions by their demonstration that *p*-aminobenzoic acid is necessary for growth of *Clostridium acetobutylicum* (W) which in its normal growth thus suffers from a disability induced in other organisms by sulphanilamide.

"A point stressed by these workers is the quantitative discrepancy between the interacting quantities of *p*-aminobenzoic acid and sulphanilamide, which are consistently in the ratio of about 1:25,000. Immediate chemical reaction is thus unlikely, and Woods interprets his results in terms of an enzyme which uses *p*-aminobenzoic acid. Sulphanilamide inhibits the enzyme because it is similar enough in structure to attach itself to the points at which *p*-aminobenzoic acid must be linked for normal activity and growth. But the enzyme has much greater affinity for its normal substrate, *p*-aminobenzoic acid, and a very large excess of sulphanilamide is necessary to displace this from the enzyme. Since most tissues and effusions contain *p*-aminobenzoic acid, the large amounts of sulphanilamide therapeutically necessary can be understood. Deleterious effects of sulphanilamide on the patient are explained by the tissues not only containing but needing *p*-aminobenzoic acid.

"Discovery of new chemotherapeutic agents is still largely made by empirical methods. Practised chemotherapists will shrug when asked why they made particular compounds. It is usually by flexible analogies with previously successful agents or other natural compounds, or simply by the preparation of all available substances of a given type. As was indicated by Fildes, and has now been brought out by Rubbo and Gillespie, the structural similarity between the essential substance *p*-aminobenzoic acid and the inhibiting agent sulphanilamide presents a new type of guide to the synthesis of chemotherapeuticals. The suggestion that compounds similarly related to known essential substances should be prepared has yielded several new inhibitory compounds. For its further development this suggestion requires that other known inhibitory substances be investigated nutritionally in order to provide further models of this type. No chemotherapeutic millennium is at hand—not all inhibitory compounds act as does sulphanilamide nor are all inhibitory compounds therapeutic agents—but one new and more rational method has been added to those already available in chemotherapeutic research."

(1) Woods, D. D. *Brit. J. exp. Path.* (1940.) 21. 74.
(2) See also *Nature, Lond.* (1940.) 146. 838.
(3) Fildes, P. *Lancet.* (1940.) i. 955.

ADVERTISERS' ANNOUNCEMENT

Attention is drawn by Burroughs Wellcome & Co., 12, Red Lion Square, London, W.C.1, to the fact that a number of 'Wellcome' Brand Veterinary Serological Products are now subject to Purchase Tax at 16⅔ per cent. as from April 27th, 1942. The following products are affected: Anti-Bronchisepticus Serum; Brucella Abortus Vaccine (Killed); Canine Distemper Serum, Vaccine and Virus; B. Chauvoei Anti-Serum; Leptospira Vaccine; Pregnant Mares' Serum (P.M.S.); Staphylococcus Toxoid; Struck Vaccine.

CORRESPONDENCE

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.
The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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From Dr. W. L. Williams

SCHISTOSOMUS REFLEXUS: THE SIGNIFICANCE OF TERATOLOGICAL STUDY

TO THE EDITOR OF THE VETERINARY RECORD

Sir,—I have read with interest the contribution of R. H. Smythe in the April 19th, 1941, number entitled "Caesarian Section," and that "A Foetal Rarity" by J. Robertson in the April 26th issue. Both were evidently cases of *Schistosomus reflexus* (Gurlt). The reader is quite justified in inferring that the authors considered the cases are rare. Smythe saw one case only and adds "I believe I have heard of one or two similar cases since then, but they are very rare."

It is difficult to define *rare* or *very rare* with accuracy. This aberration in the development of the bovine ovum has been known for more than a century, is well described by Gurlt and others interested in veterinary teratology and is mentioned by most veterinary obstetrists. Fleming, citing Gurlt, gave a fairly good description of the monster in the first edition of his Veterinary Obstetrics, which has been on my shelf for 67 years. He cites 10 case reports, 6 of which occurred in Great Britain, 5 bovine and 1 ovine, all recorded in *The Veterinarian*. Fleming cites Franck, Saint-Cyr and other Continental Europeans as having studied numerous cases, but fails to refer to any one veterinarian as having observed more than a single case. During 62 years in the profession I have observed two cases clinically. That does not establish its rarity, because my clinical activities have not been under favourable environment for the prevalence of this monster. My early and most concentrated clinical experience was in a horse-breeding area, which had in addition many cattle of the beef breeds, running free out of doors. The monster is not known to occur in solipeds; it possibly occurs with extreme rarity in unhoused beef cattle. My active participation in the ambulatory clinic at Cornell University was comparatively limited and occurred at a period when intensified dairying had not yet become fully established. Later the area covered by the ambulatory clinic became a highly concentrated dairying region devoted to the production of market milk. Most calves are born after a somewhat abbreviated gestation, and are inevitably defective in size and vigour; for alleged economic reasons they are sparingly fed fresh, whole milk; they are closely housed; the heifers are commonly bred to calve at two years when only partly grown; after calving they are rebred as early as possible; they are intensely fed; and they are closely confined during a large part of the year. Under such conditions genital diseases and teratological aberrations abound. Hence during recent years monstrosities have not been rare and among these *Schistosomus reflexus* has been conspicuous. During the past 14 years six cases have occurred, or one case for each 2·3 years, four of which were observed during the past seven years, or one case in each 1·75 years. The ambulatory clinic is conducted by two active workers who devote less than full time, each having class-room teaching.

The adjacent areas, like that of the ambulatory clinic, have similarly concentrated upon the production of market milk, and veterinarians having learned that interest existed regarding teratology at the college, specimens of *Schistosomus* were frequently forwarded to the college for study.

As related in my Diseases of the Genital Organs of Domestic Animals, some of these cases provided unusual opportunity for study. In available reports of cases it is generally stated that the viscera of the monster were normal. Those which I have recently studied in detail fail to support this contention. In all cases which I have studied, the liver has been extremely cystic and apparently devoid of normal hepatic tissue. In these cases, where detailed study was possible, the allantoic veins failed to communicate with the liver or enter the posterior vena cava. Instead these vessels entered the *anterior vena cava*, thus depriving the liver of its physiological nutrient supply, and arresting its development. This suggests that the reflexion of the ovum occurred prior to the formation of the allantois, preventing the allantoic vessels from reaching the liver and posterior vena cava and causing it to enter the anterior vena cava at about the location of the vitelline vessels, possibly through these. This defect having been uniformly present in those cases admitting of careful study, the question arises whether this aberration is present in most, or all of these monsters.

Two of these cases were accompanied by the afterbirth, each of which revealed the highly interesting abnormality of a long,

narrow tube extending from the area where the foetus had been located into the necrotic tip of the allantois-chorion. The structure was located within the dorsal wall of the chorion at about the location of the vitelline tube of the fertilised ovum. So far as could be determined, it was the vitelline tube, which had become incarcerated within the necrotic tip, and suggested that herein lay the primary cause of *Schistosomus reflexus*. This apparently explains why this monster occurs only in ruminants and swine, since solipeds and carnivora do not have the tubular vitelline sac.

Messrs. Smythe and Robertson have limited their discussion to the diagnosis and relief of the dystocia. Other aberrations than those mentioned above appear, such as distension of the cutaneous, inverted sac, and distension of the rumen, as recorded in my Veterinary Obstetrics, and of hydrocephalus as mentioned by other veterinary obstetrists.

There is a too general tendency to regard monsters as mere freaks of nature, without important meaning beyond the dystocia they may cause. Teratology is not accorded a conspicuous place in veterinary education. It may be regarded as the sinister side of embryology, and as such should be given a place coequal with embryology.

The basis of successful animal husbandry and veterinary science is the fertilised ovum, which needs undergo normal embryological development, free from pathological or teratological interferences, so that healthy, vigorous young may be born. Monsters are too infrequent for the veterinary practitioner, working alone, readily to attain sufficient knowledge of them, but if they would study to the best of their ability, cases in their practice, including breeding histories of both parents, and record their findings, much might be gained. A further gain would become possible if a central agency were established where monsters might be sent for study by some individual qualified by adequate study in this particular field.

Believe me,

Yours very truly,

209, White Park Road, Ithaca, N.Y. W. L. Williams.

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INFERTILITY IN BOVINES

To the Editor of the Veterinary Record

Sir,—I have been a great admirer of Folmer Neilsen's work and a supporter of his technique since the Aberdeen Congress of 1924. Those of us who were fortunate enough to make his acquaintance on that occasion will recall not only the clarity with which he demonstrated his technique for the treatment of endometritis, but also the great enthusiasm he put into the discussion of the whole subject of bovine sterility. Yet, when the history of this subject comes to be written, I do not think that Major Roche-Kelly's description of Neilsen as "the *first* great authority on bovine sterility" will be accepted by all. Such veterinarians as Hess, Albrechtsen and Williams (W. L.), to name only three, were authorities on this subject before Neilsen made his mark. That he was, however, responsible for bringing about greater clinical progress in this subject than the earlier authorities will probably be acknowledged universally.

Yours faithfully,

Stidulfe Meade, Seal, Sevenoaks. L. P. Pugh.

May 11th, 1942.

To the Editor of the Veterinary Record

Sir,—Mr. Gould may classify himself as he likes, but although I hold it an honour to be bracketed intellectually with Mr. R. H. Smythe, he and I are under no bond of agreement; we have not met or had any direct communication for about five years, and during the period when we did see each other occasionally, I cannot remember whether we agreed or not on any particular subject. So, speaking for myself alone, I make this reply to Mr. Gould. The only contribution I have made to the *Record* even remotely connected with bovine infertility was that which appeared in your issue of April 25th: at Divisional meetings I have said very little, though at one Mid-West meeting, speaking in reply to a member who had said that the Survey Committee had told us nothing that we had not had years ago from Neilsen, I warmly applauded the Committee's achievement, saying that during years and years Neilsen's teachings had made no impression on the generality of the profession until the Survey Committee in a few months put us in an entirely new and advantageous position in regard to the treatment of infertility. I do not "deprecate the action of the Survey Committee in drawing the attention of the profession and the livestock industry to the enormous wastage caused by infertility" and have never done so. A house otherwise sound may have a loose slate, and it should not be accounted a crime to draw attention to it, but certain members of the Survey Committee made it a practice to browbeat out of debate anyone who did not swallow their views, hook, line and sinker. In regard to the Committee's work in connection with infertility and abortion I have given praise, and next to no criticism except as to methods of propaganda and prospective methods of publicity. This limited criticism seems to have been fiercely resented in a manner liable to turn would-be friends into enemies.

Touching my last letter, I have one regret, and that concerns the use by me, in quotation, of the phrase "pernicious pinching of the ovaries." I used this to cover attempts by quacks and unqualified persons generally, forgetting that the phrase might have acquired a special significane in previous controversy to which I was not a party. I do not accuse Mr. Gould (for whose pioneer work in connection with infertility I have the greatest admiration), or his pupils, of "pernicious pinching."

I now call attention to another custom which seems to be creeping in as a supplement to the jeer about destructive criticism, and that is the suggestion made quite recently by at least two of your correspondents (Mr. K. G. Morgan and Major Roche-Kelly) that other correspondents (in particular Mr. R. H. Smythe and myself) should occupy themselves with the writing of clinical articles. I ask you, Sir, if the courtesy of your correspondence columns is to be extended only to those who make clinical communications? It does not affect me much, however, as, whatever the provocation, I do not propose to trouble you again for a year and a day at least. But if Major Roche-Kelly is anxious to read a clinical communication from my pen (I do not claim his adjective) he need not wait so long: he can find several quite earnest ones from that source in your back numbers and give them, thus belatedly, the welcome he had ready for my next.

Yours faithfully,

Bath. Esmond Brown.

May 11th, 1942.

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THE COMPETENCE OF THE NEWLY QUALIFIED

To the Editor of the Veterinary Record

Sir,—I have followed the correspondence on the capabilities of new graduates with much interest, and have been again surprised to note how readily an expression of opinion in your columns generates a heated controversy and much irrelevant argument. Mr. James Robertson's statements may be a little unkind, but no reasoning person will deny that there is a fair measure of truth in them.

The chief problem is, as your editorial note puts it, the lack of "animal mindedness" in a certain percentage of students leaving college. A small number of these are true "misfits" and appear to be an inevitable feature of most professions, but the majority possess potential abilities and lack only opportunity for their development and expression. Neither students nor professional staffs are to blame for this. It is entirely a matter for the governing bodies of colleges.

It is clear that students who have known and handled animals for years before taking up their studies will fall readily into the ordinary work of a general practice. But others who have been less fortunate in their youth should not be penalised because of a system of veterinary education which allows them, at the end of five years' study, to remain in complete ignorance of *practical* animal husbandry.

From Mr. Willis's quotation this is obviously no new difficulty, though it is one that has increased greatly with the expansion of the profession during the last twenty years. Previous to that time few men without early experience of animals took up veterinary studies. But in recent years, thanks mainly to the promotion of the wrong sort of publicity in the daily Press, many members of all classes have been attracted to the colleges without having much real appreciation of what will be required of them as graduates. The right sort of publicity now would help to reduce the number of these misguided aspirants who tend to regard a membership diploma as a "bread ticket" and nothing more.

Another regrettable fact is that teaching staffs have recently been so overwhelmed by masses of students that the personal touch, formerly so valuable in imparting "gumption" to the student, has now disappeared from demonstrations and tutorials.

It seems to me that a board of governors endowed with the right amount of vigour and foresight should, at least as long as ten years ago, have acquired a conveniently situated farm capable of maintaining a large dairy herd, several brood mares, and a representative number of other species of farm animals. Such a farm would be a definite financial asset and not a drain on available resources. A small hostel would provide accommodation for relays of students who would be responsible for the entire husbandry of the stock under the supervision of a skeleton staff of competent farm workers. In this way the student would quickly "get to grips" with the

various species while carrying out such tasks as feeding, milking, clipping, grooming, ear marking, etc. Interest would be added by routine clinical procedures such as blood testing, tuberculin testing and preventive vaccinations.

Each student would spend at least three months on the farm, and perhaps the most appropriate time for this would be about the middle period of the curriculum after the basic principles of science and physiology have been mastered. In this way misfits would tend to drop out of the course before encumbering the farmyard with their presence. Some adjustment of the curriculum would of course be necessary.

An alternative scheme, though much less satisfactory, might be the establishment of some degree of liaison with agricultural colleges to allow veterinary students similar facilities on existing experimental farms.

Myself a recent graduate, I am constrained to close on a note of reproach to a teaching staff that allowed me to graduate in complete *practical* ignorance of certain essential procedures, some of which I will enumerate.

1. Epidural anaesthesia.
2. Use of the uterine catheter.
3. Udder infusion.
4. Intravenous medication and blood letting in large animals.
5. Casting by side lines.

All these could have been quickly and simply demonstrated to a large class, when many subsequent doubts and fears would have been avoided. Instead we had repeated demonstrations of various neurectomies and tenotomies, which operations are apparently still held in high esteem by the examining body. Nevertheless, progress at the colleges is continual, and I learn that some at least of these omissions have already been corrected.

Yours faithfully,

Shrewsbury. ROBERT R. ROBERTSON.
May 14th, 1942.

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To the Editor of the Veterinary Record

Sir,—In view of your note relating to the correspondence on the matter of the competence of the newly-qualified, I am prompted to make a few observations, especially as I am comparatively recently qualified, a woman and a "townee"—the latter by circumstance rather than inclination. If my remarks have a somewhat personal bias, I hope this will be forgiven.

I think there is ground for practitioners' complaints regarding the lack of practical experience of some veterinary students, but I believe the problem to be capable of solution. In my view the first essential is for a prospective veterinary student to have decided at a fairly early age that this is the profession of choice, and to have sound reason for wishing to enter it. It is useless for the woman who thinks she will be a glorified kennelmaid and "loves dogs," or for the purely horse-racing young man. There must be a tendency to the scientific together with a general interest in animals or an agricultural mode of life. Such a person will either have been in contact with animals of most types by environment, or if not by environment, by deliberate choice. Having so decided the youngster will automatically take every opportunity to familiarise himself with his future subjects.

It is undeniable that many students reach their third year never having been on a farm except with their extra-mural teacher: unable to ride, milk, cope with harness, grooming, etc., nor any of the hundred-and-one everyday things associated with animal-keeping of any kind, and I become daily more convinced that the candidate for veterinary surgery must have—shall I say—a vocation, otherwise there is a grave danger that many will arrive at college with the fundamental ignorance which practitioners deplore.

To make the only requirement of an entrant a certain standard of general education is futile. At present there seems to be a need for some sort of guidance for candidates for the veterinary schools. Youngsters should know well before the time of entry what are the requirements for a successful student: they should be told what the course involves in the way of subject matter, and expenses outside fees (books, instruments, extra-mural teaching, etc.); they have a right to some form of prospectus. It is for these reasons that the Society of Women Veterinary Surgeons has recently put forward as one of its proposals the advisability of having some panel to meet and advise candidates. It would be the function of such a body to point out to intending students their suitability or otherwise for the profession, to indicate, where necessary, certain fundamental shortcomings and, if possible, the remedy for them; also to explain to them the field covered by veterinary science. Some form of preliminary selection is clearly desirable, but whilst the teaching schools continue to regard themselves as being compelled, on financial grounds, to admit the maximum number of students, it is obvious that any such process will be regarded by many as impracticable—but on this matter I am out of my depth.

It is my conviction that the worth-while veterinary student is "born and not made"; at all events, as I have said, he or she must be such for years before entering college, and if not so placed environmentally as to obtain the necessary experience they must take steps to remedy this for themselves. It is simple enough and I conclude by citing my own experience. From the age of 14 I was sent to spend all my school holidays on a farm—not a large well-run farm, but a small hill farm in Wales, and there was no great financial outlay involved. The only job I failed to do on that farm was ploughing, and I suppose I spent a total of 12 to 15 months there at various seasons. Apart from that, I always took part in the work of stables, kennels, etc., whenever there was a chance, and consequently although never a good rider I have done most things with horses including riding racehorses at work. For personal reasons my entry into the R.V.C. was delayed for a few years after leaving school and this period I utilised to make myself as proficient as possible with the one subject with which I thought I should have most to deal, the dog. I spent several years as that thing so despised of most veterinary surgeons, a dog breeder and exhibitor. I never cease to be thankful I did it. As a result of all this I entered college with a working knowledge of most animals, and as Animal Management would have it "a knowledge of the animal in health"—I flatter myself that I know a sound animal when I see it (I do not speak of soundness in horses). Lastly, I acquired at least some measure of acquaintance with the innumerable superstitions, the strange beliefs and the peculiar foibles of those whom I hoped would some day be my clients.

Yours faithfully,

78, Brentway, JOAN O. JOSHUA.
Finchley, N.3.
May 11th, 1942.

To the Editor of the Veterinary Record

Sir,—There has been much discussion lately regarding the competence of newly-qualified members of the profession, and most of the criticism comes not from their lack of scientific knowledge, but from their lack of practical experience.

I think that many students go straight to a practitioner in their vacations as soon as they enter college, before they know anything about the handling of animals, let alone their treatment in disease, and thus a great deal of time is virtually wasted. I should like, therefore, to pass on the advice given me by the late Sir Frederick Hobday, then Principal of the Royal Veterinary College, London.

Before entering the College I had an interview with him during which I asked what use I should make of the intervening six months. Sir Frederick suggested that I should work on a stock farm or in a stables and become thoroughly accustomed to the handling of animals. He insisted that it was all-important at this stage to acquire practical knowledge which could later be shaped by the Animal Husbandry lectures, and that only after the second year examination was it of any use to go round with a veterinary practitioner.

I spent the next term at an agricultural institute where I was allowed to spend all my time between the stock, piggery and poultry sections; and the following vacation was spent working as a groom on a riding establishment. The practical experience so gained I found invaluable as soon as I started with a practitioner in an agricultural practice.

If every student was given this advice before entering college—or, better still, if it could be arranged with the Agricultural Colleges to give every student a term's practical work before commencing studies—there would be no reason for complaints that recent graduates have no working knowledge of Animal Husbandry. It would also solve a problem which has been worrying both staff and students of the Veterinary College itself—to my certain knowledge since 1934—with little appreciable progress.

Yours faithfully,

46, Dartmouth Road, MARGARET O. E. ROSSITER, M.R.C.V.S.
Paignton. (*née* Maillard).
May 14th, 1942.

MAJOR FRANK HOGG (LATE R.A.V.C.)

To the Editor of the Veterinary Record

Sir,—I take this opportunity of informing you that my uncle and aunt, Major and Mrs. Frank Hogg, are interned in Hong Kong. The news was very welcome, but owing to the brevity of the communication no further details can be given. I can only pray that they, and their associates, will have reasonable humane treatment.

I am indebted to Mr. R. P. Turner (Bury St. Edmunds) for this information.

Yours faithfully,

23, Woodside Lairage, N. M. CLAYTON.
Birkenhead.
May 13th, 1942.